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EXAMINER

LAFORGIA, CHRISTIAN A

ART UNIT

PAPER NUMBER

2139

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/809,607 | Applicant(s) MATUSZ ET AL. | |
| | Examiner Christian LaForgia | Art Unit 2139 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment of 22 April 2008 has been noted and made of record.
2. Claims 1-20 have been presented for examination.

Response to Arguments

3. Applicant's arguments with respect to the 35 U.S.C. 112, 2nd paragraph rejection of claims 3, 4, and 9 have been considered but are moot in view of the new grounds of rejection.
4. Applicant's arguments regarding the prior art rejection of the claims filed 22 April 2008 have been fully considered but they are not persuasive.
5. The Applicant argues that the Perlman reference does not teach wherein each frame is encoded with authentication information if the frames do not include authentication information (see similar, but not necessarily identical limitations in the independent claims). The Examiner disagrees. As shown in the previous office action, Perlman discloses at column 4, lines 64-66 that the integrity block can be for a single data packet. Perlman also discusses at several points throughout the disclosure that there are a multitude of packets transmitted (i.e. column 1, lines 60-63, i.e. a data authentication system that at the sender produces for one or more data packets a plurality of "integrity checks"), thereby requiring an integrity check for each packet which meets the limitation that each frame is encoded with authentication information; therefore, the rejection is maintained.
6. Applicant's arguments with respect to the prior art rejections of claims 2-20 amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.
7. See further rejections set forth below.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 3, 4, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 3, 4, and 9, it is unclear which versions of the Iub and Iur interface protocols the Applicant is referring to and since protocols are subject to revisions and changes, the scope of the claims would also be subject to said revisions and changes.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 1, 5, 6, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,996,712 to Perlman et al., hereinafter Perlman, in view of U.S. Patent Application Publication No. 2005/0013324 A1 to Leahy et al., hereinafter Leahy.

12. As per claim 1, Perlman teaches an apparatus, comprising:

a network interface (Figures 2 and 4 [block 15]) to communicate frames of information in accordance with a protocol (column 3, lines 57-60, i.e. the end station sends data packets to recipients via network interface in a known manner); and

a frame authentication module operatively responsive to said network interface (Figure 2 [block 14]), said frame authentication module to authenticate multiple frames communicated by said network interface (column 4, lines 4-19, column 5, lines 49-52, i.e. authenticating the

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received data packets, selecting bytes from each of the received data packets to perform the integrity check), with each frame containing authentication information in a spare extension field (Figure 3 [block 34], column 4, lines 64-66, column 7, lines 50-67, i.e. the integrity block is included in the data packet) or encode each frame with authentication information if the frame does not include authentication information (column 3, lines 51-60, column 4, lines 1-3, column 4, lines 64-66, column 5, lines 53-61, i.e. produce an encrypted integrity block for a single data packet, using an integrity check for each packet, implying that there are more than one packet and Perlman's use of the plural data packets).

13. Perlman does not teach the use of a wireless protocol.

14. Leahy teaches validating incoming packets based on a key included in the packet that is equally applicable to both wired and wireless networks regardless of the physical topology or protocols used (paragraph 0047).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the packet authentication using a wireless protocol since Perlman discloses at column 3, line 60 that any known protocol may be used. Furthermore networks are limited to either being wired or wireless, so it would have only required ordinary skill in the art could to try implementing the authentication scheme in either a wired or wireless environment. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

16. Regarding claims 5 and 10, Perlman teaches wherein said authentication module comprises:

an authentication encoding module to encode each frame with authentication information (column 3, lines 50-60, i.e. during a send, creating integrity checks); and

an authentication decoding module to authenticate each frame using said authentication information (column 4, lines 39-63, i.e. recipient decrypts the integrity blocks).

17. With regards to claims 6 and 11, Perlman teaches wherein said authentication encoding module generates said authentication information using an authentication key (i.e. shared secret key), data from said frame (i.e. data bytes from one or more data packets), and a change parameter (column 3, lines 4-25, i.e. selected information, timestamp, packet sequence numbers) (column 3, lines 50-57).

18. As per claims 13 and 17, Perlman teaches a method and an article, comprising:
receiving multiple frames of information over a medium (column 4, lines 3-19, column 5, lines 49-52, i.e. authenticating the received data packets, selecting bytes from each of the received data packets to perform the integrity check);

determining whether each frame includes authentication information (column 3, lines 60-64, column 4, line 64 to column 5, line 3, i.e. the integrity block may be in a separate packet, the authentication information does not have to be in transmitted packet, instead traveling independently) in a spare extension field (Figure 3 [block 34], column 4, lines 64-66, column 7, lines 50-67, i.e. the integrity block is included in the data packet);

authenticating each frame using said authentication information (column 4, lines 3-9, column 4, lines 40-63); and

encoding each frame with authentication information if said frame does not include said authentication information (column 3, lines 51-60, column 4, lines 1-3, column 6, lines 14-27).

19. Perlman does not teach the use of a wireless protocol.

20. Leahy teaches validating incoming packets based on a key included in the packet that is equally applicable to both wired and wireless networks regardless of the physical topology or protocols used (paragraph 0047).

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the packet authentication using a wireless protocol since Perlman discloses at column 3, line 60 that any known protocol may be used. Furthermore networks are limited to either being wired or wireless, so it would have only required ordinary skill in the art could to try implementing the authentication scheme in either a wired or wireless environment. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

22. Regarding claims 14 and 18, Perlman teaches retrieving an authentication key (column 4, lines 39-63, i.e. shared secret key);

duplicating said authentication information using said authentication key (column 4, lines 41-63, i.e. reproducing the integrity checks);

retrieving said authentication information from each frame (column 4, lines 39-63);

comparing said duplicated authentication information with said retrieved authentication information (column 4, lines 43-63); and

authenticating each frame in accordance with said comparison (column 4, lines 43-63).

23. Regarding claims 15 and 19, Perlman teaches generating said authentication information (column 3, lines 50-58, i.e. generate integrity block); and

storing said authentication information in a spare extension field of each frame (Figure 3 [block 34], column 7, lines 50-67).

24. With regards to claims 16 and 20, Perlman teaches retrieving an authentication key (column 3, lines 50-57, i.e. shared secret key);

retrieving data from each frame (column 3, lines 50-57, i.e. data bytes from one or more data packets);

retrieving a change parameter (column 3, lines 4-25, column 3, lines 50-57, i.e. selected information, timestamp, packet sequence numbers); and

creating said authentication information in accordance with an authentication algorithm using said authentication key, said data, and said change parameter (column 3, lines 50-57).

25. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Leahy as applied above, and in further view of **draft 3G TS 22.100**, hereinafter **TS 22.100**.

26. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of **TS 25.427** as applied to claim 7 below, and further in view of **TS 22.100**.

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27. Regarding claims 2 and 8, Perlman does not teach wherein said network interface comprises a network interface defined in accordance with the Universal Mobile Telecommunication System.

28. **TS 22.100** teaches wherein said network interface comprises a network interface operable with a Universal Mobile Telecommunication System (pages 7-9).

29. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the network interface to comply with the UMTS specification, since **TS 22.100** discloses a number of security features on page 12, which include, but are not limited to, mutual authentication between the user and the serving network, confidentiality of user and signaling data, and end-to-end encryption.

30. Claims 3, 4, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Leahy as applied above, and in further view of **3G TS 25.427**, hereinafter **TS 25.427**.

31. Regarding claims 3 and 9, Perlman does not disclose wherein said network interface comprises a network interface configured in accordance with one of an Iub interface protocol and an Iur interface protocol.

32. **TS 25.427** teaches wherein said network interface comprises a network interface configured in accordance with one of an Iub interface protocol and an Iur interface protocol (Figures 1 and 2, page 7-80).

33. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the network interface to be configured in accordance with the Iub and Iur interface

protocols, **TS 25.427** states at page 7 that all the set of cells are carried on one transport connection, which means there are as many transport connects as set of coordinated transport channels and user ports for that communication, thereby preventing any traffic bottlenecks.

34. Regarding claim 4, Perlman does not teach wherein said wireless protocol comprises a framing protocol defined by one of an Iub interface protocol and an Iur interface protocol.

35. **TS 25.427** teaches wherein said wireless protocol comprises a framing protocol defined by one of an Iub Specification and an Iur Specification (pages 11-21).

36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to format the data packets in accordance with the framing protocol disclosed in the Iub and Iur interface protocols, since **TS 25.427** states on page 12 that the purpose of the user data frames is to transparently transport the data blocks between the node and the radio network controller.

37. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in further view of **3G TS 25.427**, hereinafter **TS 25.427**.

38. As per claim 7, **TS 25.427** teaches a system, comprising:

a node B system having a first network interface (page 8, Figures 1 and 2, i.e. NB sending and receiving data from SNRC);

a first radio network controller to communicate with said node B system, said first radio network controller having a second network interface (page 8, Figures 1 and 2, i.e. SRNC sending and receiving data from NB).

39. **TS 25.427** does not teach a frame authentication module for each of said first and second network interfaces, said frame authentication module to authenticate frames communicated between said first and second interfaces.

40. Perlman teaches a frame authentication module for each of said first and second network interfaces (Figure 2 [block 14], column 3, line 50, i.e. each end station includes an authentication system), said frame authentication module to authenticate multiple frames communicated between said first and second interfaces (column 4, lines 1-19, column 4, lines 39-63, column 5, lines 49-52, i.e. authenticating the received data packets, selecting bytes from each of the received data packets to perform the integrity check), with each frame containing authentication information in a spare extension field (Figure 3 [block 34], column 4, lines 64-66, column 7, lines 50-67, i.e. the integrity block is included in the data packet) or encode multiple frames with authentication information if the frames do not include authentication information (column 3, lines 51-60, column 4, lines 1-3, column 4, lines 64-66, column 5, lines 53-61, i.e. produce an encrypted integrity block for a single data packet, using an integrity check for each packet, implying that there are more than one packet and Perlman's use of the plural data packets).

41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the authentication system of Perlman on the systems of Node B and radio network controller, since Perlman states at column 2, lines 2-10 that the authentication system would be fast and uncomplicated and would add robustness to the systems.

42. Regarding claim 12, Perlman and **TS 25.427** do not teach a second radio network controller to communicate with said first radio network controller, said second radio network

controller having a third network interface; and a frame authentication module for said third network interface, said frame authentication module to authenticate frames communicated between said second and third interfaces.

43. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second radio network controller having a third interface with its own frame authentication module, since it has been held that it only requires routine skill in the art to merely duplicate a part, in this case the second radio network controller. See MPEP § 2144.04; see also *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Conclusion

44. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

45. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian LaForgia whose telephone number is (571)272-3792. The examiner can normally be reached on Monday thru Thursday 7-5.

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47. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine L. Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

48. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christian LaForgia/
Primary Examiner, Art Unit 2139

clf